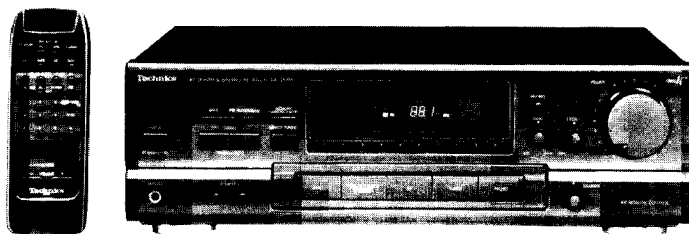


Technics®

AV control stereo receiver SA-GX190

Operating Instructions



Before connecting, operating or adjusting this product,
please read these instructions completely.



P | PC

RQT2694-P

Dear Customer

Thank you for purchasing this Technics product. For optimum performance and safety, please read these instructions carefully.

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Reference

Technical specifications	Back cover
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The model number and serial number of this product can be found on either the back or the bottom of the unit. Please note them in the space provided below and retain them for future reference.
MODEL NUMBER..... SA-GX190

CAUTION:



This phrase is applied only for U.S.A.:
Any unauthorized changes or modifications to this equipment would void the user's authority to operate this device.


WARNING:


TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.

CAUTION:

TO PREVENT ELECTRIC SHOCK MATCH WIDE BLADE OF PLUG TO WIDE SLOT, FULLY INSERT.

	CAUTION RISK OF ELECTRIC SHOCK DO NOT OPEN	
CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE SCREWS. NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.		

 The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

 The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

Precautions

Before using this unit please read these operating instructions carefully. Take special care to follow the warnings indicated on the unit itself as well as the safety suggestions listed below. Afterwards keep them handy for future reference.

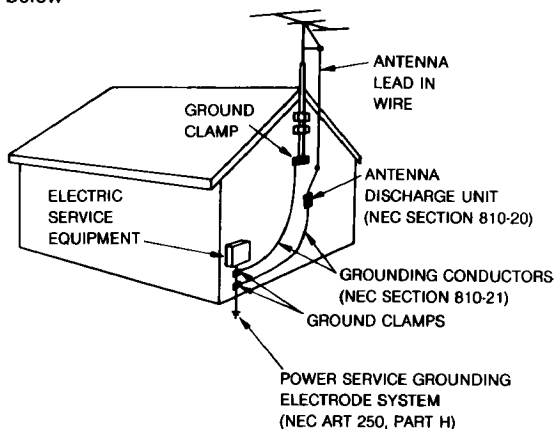
Safety

- 1. Power Source** -- The unit should be connected to power supply only of the type described in the operating instructions or as marked on the unit.
- 2. Polarization** -- If the unit is equipped with a polarized AC power plug (a plug having one blade wider than the other), that plug will fit into the AC outlet only one way. This is a safety feature. If you are unable to insert the plug fully into the outlet, try reversing the plug. If the plug should still fail to fit, contact your electrician to replace your obsolete outlet. Do not defeat the safety purpose of the polarized plug.
- 3. Power Cord Protection** -- AC power supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them. Never take hold of the plug or cord if your hand is wet, and always grasp the plug body when connecting or disconnecting it.
- 4. Nonuse Periods** -- When the unit is not used, turn the power off. When left unused for a long period of time, the unit should be unplugged from the household AC outlet.

Installation

Environment

- 1. Outdoor Antenna Grounding** -- If an outside antenna is connected to the receiver, be sure the antenna system is grounded so as to provide some protection against voltage surges and built-up static charges. Section 810 of the National Electrical Code, ANSI/NFPA No. 70-1990, provides information with respect to proper grounding of the mast and supporting structure, grounding of the lead-in wire to an antenna discharge unit, size of grounding conductors, location of antenna-discharge unit, connection to grounding electrodes, and requirements for the grounding electrode. See figure below



NEC - NATIONAL ELECTRICAL CODE

- 2. Water and Moisture** -- Do not use this unit near water -- for example, near a bathtub, washbowl, swimming pool, or the like. Damp basements should also be avoided.
- 3. Heat** -- The unit should be situated away from heat sources such as radiators and the like. It also should not be placed in temperatures less than 5°C (41°F) or greater than 35°C (95°F).

Placement

- 1. Ventilation** -- The unit should be situated so that its location or position does not interfere with its proper ventilation. Allow 10 cm (4") clearance from the rear of the unit.
- 2. Foreign Material** -- Care should be taken so that objects do not fall into and liquids are not spilled into the unit. Do not subject this unit to excessive smoke, dust, mechanical vibration, or shock.
- 3. Magnetism** -- The unit should be situated away from equipment or devices that generate strong magnetism.
- 4. Stacking** -- Do not place heavy objects, other than system components, on top of the unit.
- 5. Surface** -- Place the unit on a flat, level surface.
- 6. Carts and Stands** -- The unit should be used only with a cart or stand that is recommended by the manufacturer. The unit and cart combination should be moved with care. Quick stops, excessive force, and uneven surfaces may cause the unit and cart combination to overturn.
- 7. Wall or Ceiling Mounting** -- The unit should not be mounted to a wall or ceiling, unless specified in this operating instructions.



Maintenance

Clean the cabinet, panel and controls with a soft cloth lightly moistened with mild detergent solution.

Do not use any type of abrasive pad, scouring powder or solvent such as alcohol or benzene.

Service

- 1. Damage Requiring Service** -- The unit should be serviced by qualified service personnel when:
 - (a) The AC power supply cord or the plug has been damaged, or
 - (b) Objects have fallen or liquid has been spilled into the unit; or
 - (c) The unit has been exposed to rain; or
 - (d) The unit does not appear to operate normally or exhibits a marked change in performance; or
 - (e) The unit has been dropped, or the enclosure damaged.
- 2. Servicing** -- The user should not attempt to service the unit beyond that described in the operating instructions. All other servicing should be referred to qualified service personnel.

Listening caution



Selecting fine audio equipment such as the unit you've just purchased is only the start of your musical enjoyment. Now it's time to consider how you can maximize the fun and excitement your equipment offers. This manufacturer and the Electronic Industries Association's Consumer Electronics Group want you to get the most out of your equipment by playing it at a safe level. One that lets the sound come through loud and clear without annoying blaring or distortion – and, most importantly, without affecting your sensitive hearing.

Sound can be deceiving. Over time your hearing "comfort level" adapts to higher volumes of sound. So what sounds "normal" can actually be loud and harmful to your hearing.

Guard against this by setting your equipment at a safe level BEFORE your hearing adapts.

To establish a safe level:

- Start your volume control at a low setting.
- Slowly increase the sound until you can hear it comfortably and clearly, and without distortion.

Once you have established a comfortable sound level:

- Set the dial and leave it there.

Taking a minute to do this now will help to prevent hearing damage or loss in the future. After all, we want you listening for a lifetime.

We Want You Listening For A Lifetime

Used wisely, your new sound equipment will provide a lifetime of fun and enjoyment. Since hearing damage from loud noise is often undetectable until it is too late, this manufacturer and the Electronic Industries Association's Consumer Electronics Group recommend you avoid prolonged exposure to excessive noise. This list of sound levels* is included for your protection.

*The level used here is different from that displayed on the system's display.

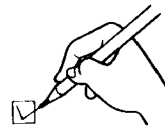
Decibel

Level	Example
30	Quiet library, soft whispers
40	Living room, refrigerator, bedroom away from traffic
50	Light traffic, normal conversation, quiet office
60	Air conditioner at 20 feet, sewing machine
70	Vacuum cleaner, hair dryer, noisy restaurant
80	Average city traffic, garbage disposals, alarm clock at two feet

THE FOLLOWING NOISES CAN BE DANGEROUS UNDER CONSTANT EXPOSURE

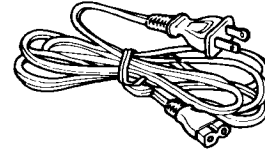
90	Subway, motorcycle, truck traffic, lawn mower
100	Garbage truck, chain saw, pneumatic drill
120	Rock band concert in front of speakers, thunderclap
140	Gunshot blast, jet plane
180	Rocket launching pad

Information courtesy of the Deafness Research Foundation.

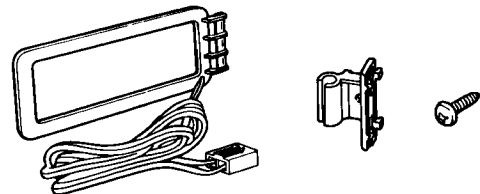


Please check and identify the supplied accessories

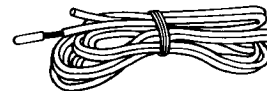
- AC power supply cord..... 1 pc.
(For USA: SJA172-A or SJA172-1)
(For Canada: SJA172-A or SJA172)



- AM loop antenna set (RSA0010)
 - AM loop antenna 1 pc.
 - AM antenna holder 1 pc.
 - Screw 1 pc.



- FM indoor antenna (SSA272)..... 1 pc.

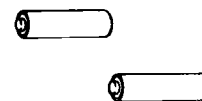


- Remote control transmitter 1 pc.

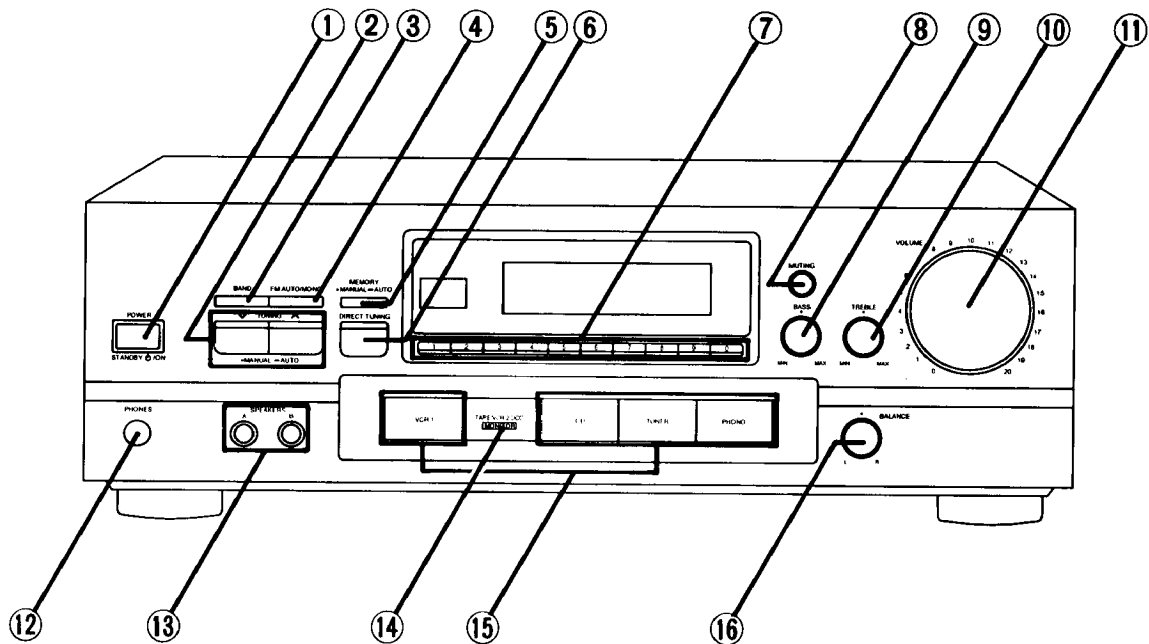
(EUR643850)



- Batteries (UM-4, "AAA", R03)..... 2 pcs.



Front panel controls





No.	Name	Ref. page
①	Power switch (POWER)	10
②	Tuning buttons (TUNING)	13
③	Band select button (BAND)	12
④	FM mode select button (FM AUTO/MONO)	12
⑤	Memory button (MEMORY)	14
⑥	Direct tuning button (DIRECT TUNING)	12
⑦	Numeric buttons (1-0)	12,15
⑧	Muting button (MUTING)	11

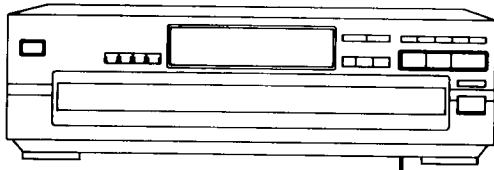
No.	Name	Ref. page
⑨	Bass control (BASS)	11
⑩	Treble control (TREBLE)	11
⑪	Volume control (VOLUME)	10
⑫	Headphone jack (PHONES)	11
⑬	Speaker select buttons (SPEAKERS)	10
⑭	Tape/VCR 2/DCC monitor button (TAPE/VCR 2/DCC MONITOR)	10,16
⑮	Input select buttons	10
⑯	Balance control (BALANCE)	11

Equipment connections

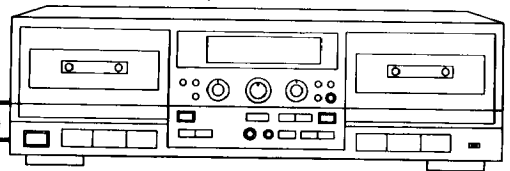
Stereo connection cable (not included)

White (L) 
Red (R) 

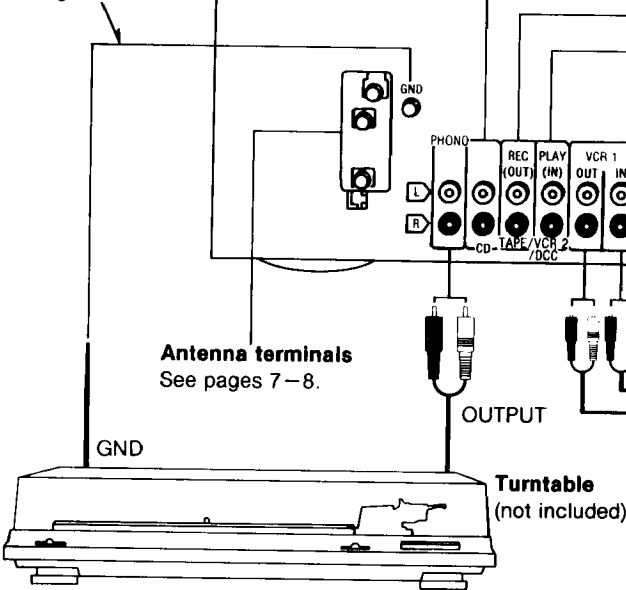
CD changer (or CD player)
(not included)



Tape deck, second VCR (audio line only) or digital compact cassette deck (DCC)
(not included)



Only for turntable with ground terminal



AC power cord
(included)

Household
AC outlet
(AC 120 V/60 Hz)

Connect this
cord after all
other cables
and cords are
connected.

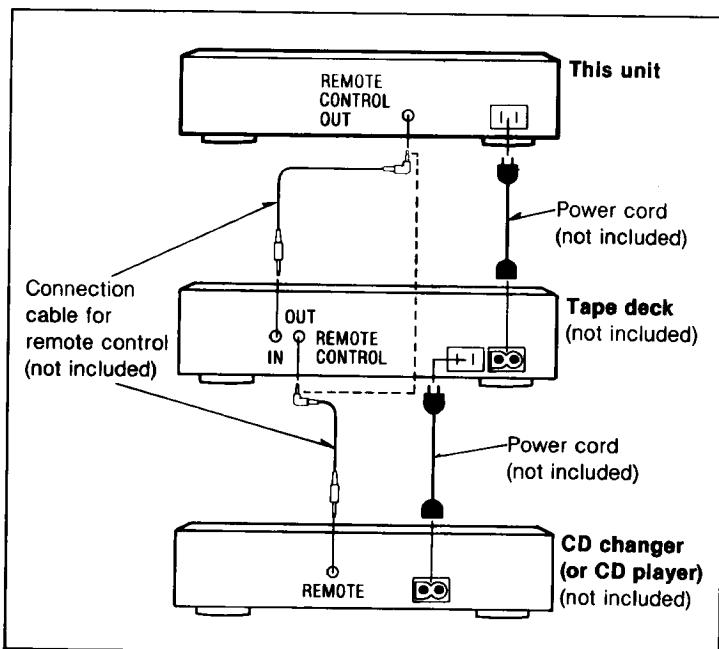
Antenna terminals
See pages 7-8.

Speaker terminals
See page 9.

Turntable
(not included)

VCR (not included)

TV (not included)



A "REMOTE CONTROL OUT" terminal

Connect the connection cable for remote control to a Technics tape deck and/or CD changer (or CD player) which has the appropriate remote control terminal as shown at the left.

If a tape deck is not being used, the CD changer (or CD player) can be connected directly (dotted line).

Note

For a tape deck and/or CD changer (or CD player) with a remote control sensor, this connection is not necessary.

B "SWITCHED" AC outlet

Power to the outlet is controlled by the power switch of this unit. Audio equipment rated up to the indicated power ratings can be connected here.

For proper remote-control operation

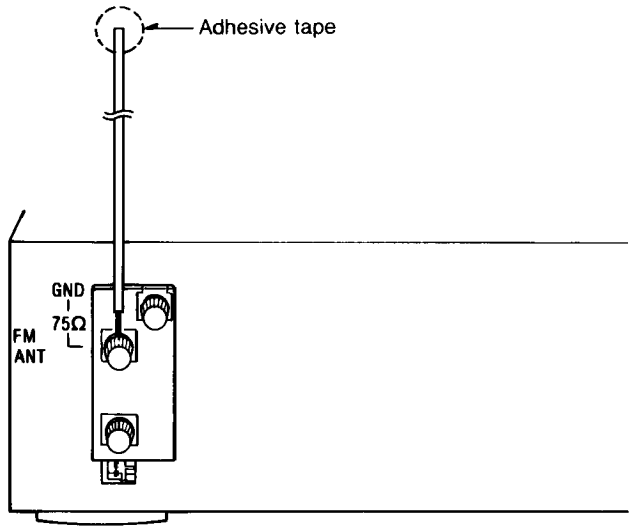
Connect the power cords of the tape deck and CD changer (or CD player) as shown at the left.

Antenna connections

FM indoor antenna (included)

This antenna is normally sufficient for reception of FM broadcasts.

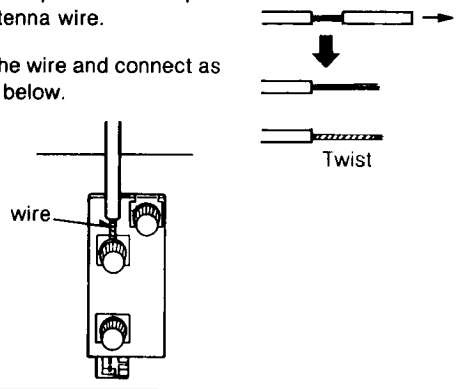
FM indoor antenna (included)



Attach to a wall (using a tape) facing in the direction of best reception.

How to connect an FM indoor antenna

- ① Pull off the plastic on the tip of the antenna wire.
- ② Twist the wire and connect as shown below.

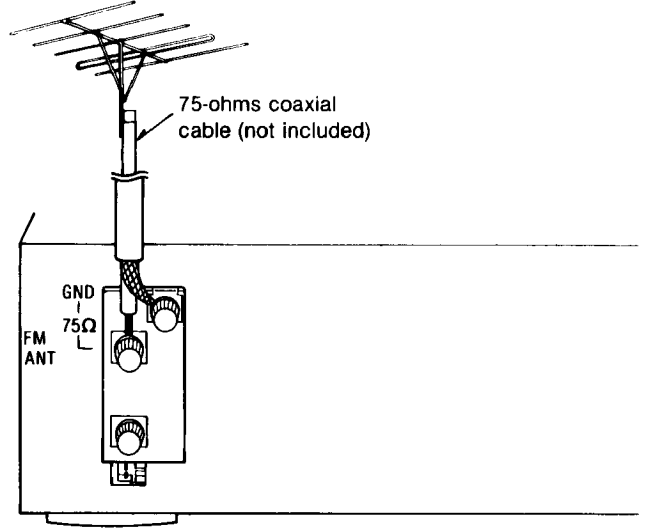


For best reception sound quality:
An FM outdoor antenna is recommended.
Disconnect the antenna if an FM outdoor antenna is installed.

FM outdoor antenna (not included)

The outdoor antenna should be used when using the main unit in mountainous areas or in spaces enclosed by reinforced concrete where the FM indoor antenna (included) does not provide satisfactory reception.

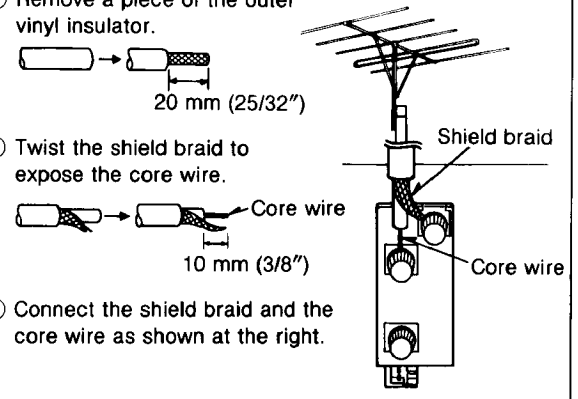
FM outdoor antenna (not included)



Note
An outdoor antenna should be installed by a qualified technician only.

How to connect a 75-ohms coaxial cable

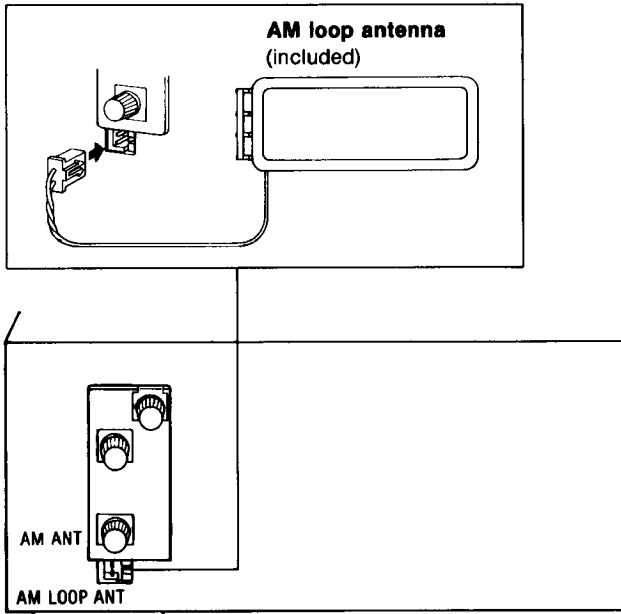
- ① Remove a piece of the outer vinyl insulator.
20 mm (25/32")
- ② Twist the shield braid to expose the core wire.
10 mm (3/8")
- ③ Connect the shield braid and the core wire as shown at the right.



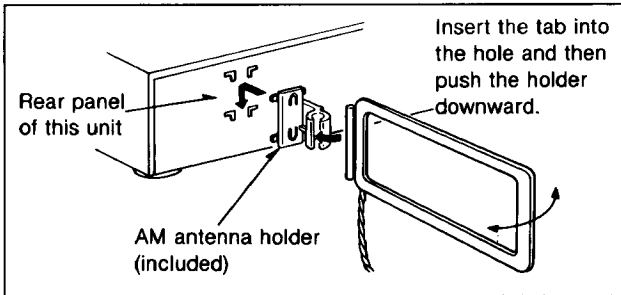
Antenna connections

AM loop antenna (included)

This antenna is normally sufficient for reception of AM broadcasts.



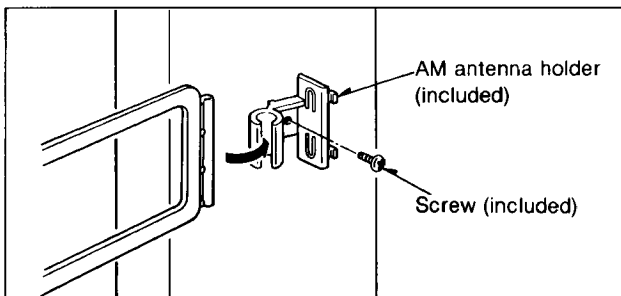
Install the AM antenna holder (included) at the rear panel of this unit and then attach the AM loop antenna to the AM antenna holder.



Pay attention to the following points when mounting the antenna.

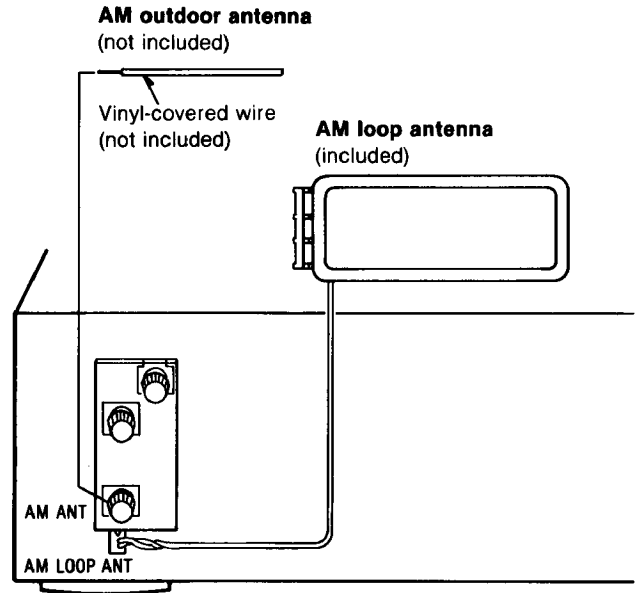
- Do not mount it horizontally (Doing so will impair reception).
- Do not mount it close to power cords, speaker wires or metal surfaces (Doing so will result in noise).
- Do not mount it close to a tape deck. When the tape deck is being used, chirping or beeping sounds may result.

When mounting the antenna to a column, a wall or rack



AM outdoor antenna (not included)

The outdoor antenna should be used when using the main unit in mountainous areas or in spaces enclosed by reinforced concrete where the AM loop antenna (included) does not provide satisfactory reception.



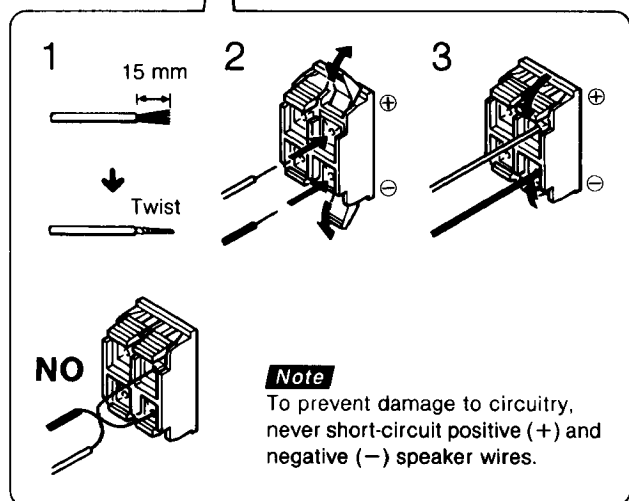
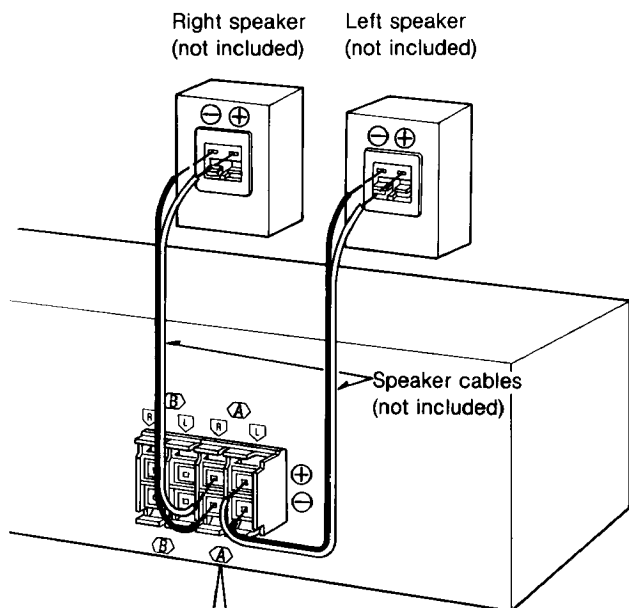
Use 5 – 12 m (16 – 40 ft.) of vinyl-covered wire horizontally at the window, or convenient location.

When the unit is not in use, disconnect the outdoor antenna to prevent possible damage that may be caused by lightning. Never use an outdoor antenna during an electrical storm.

Note

Be sure to connect the AM loop antenna even when an outdoor antenna is used.

Speaker connections



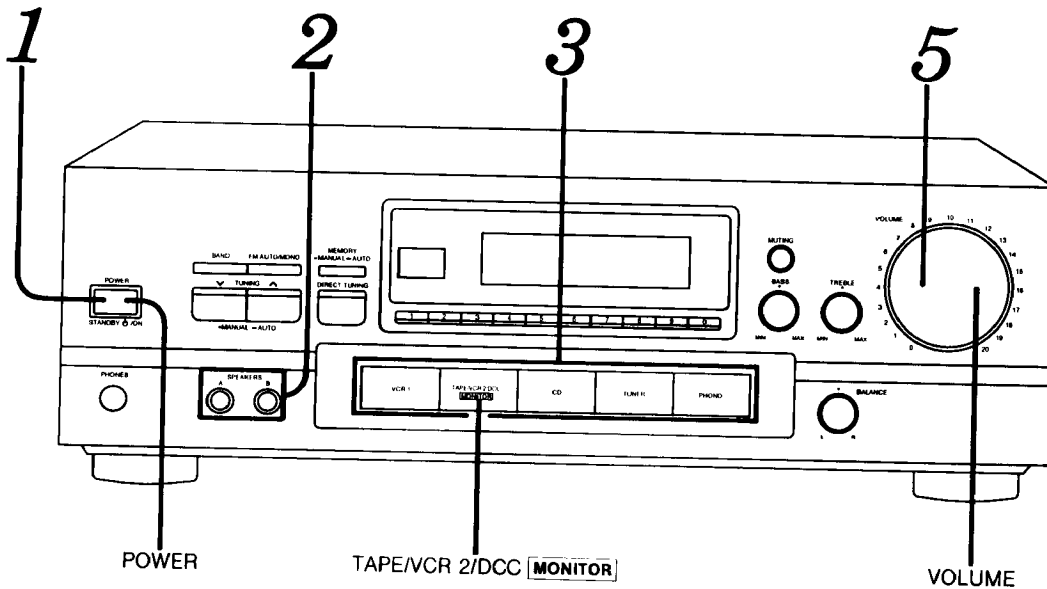
■ "B" terminals

For connection to a second pair of speakers.

■ Speaker impedance

The impedance of any speaker used with this unit must be 8 ohms.

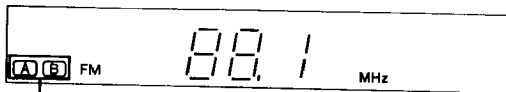
Basic operations



Before operation, set VOLUME to the "0" position.

1 **POWER** Press **POWER** to switch on the power.

2 **SPEAKERS A B** Press **A** and/or **B** to select the speaker system(s) to be used. A and B refer to the speaker terminals at the rear of the unit.



Illuminates

If the button is pressed once more, the indicator will switch off and no sound will be heard from the speakers.

3 **VCR 1 TAPE/VCR 2/DCC MONITOR CD TUNER PHONO** Press to select the desired source.

VCR 1: To listen to video tapes (VCR 1)
TAPE/VCR 2/DCC

MONITOR : To listen to tape, video tapes (VCR 2) or digital compact cassette (DCC). The tape monitor indicator will appear. (See below.)

CD: To listen to compact discs
TUNER: To listen to radio broadcasts
PHONO: To listen to phono discs

4 **Start the desired source.** (Refer to the appropriate operating instructions for details.)

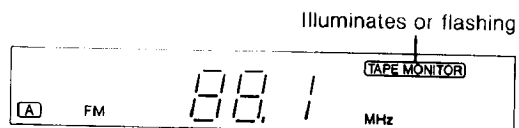
5 **VOLUME** Turn **VOLUME** to adjust the volume level.

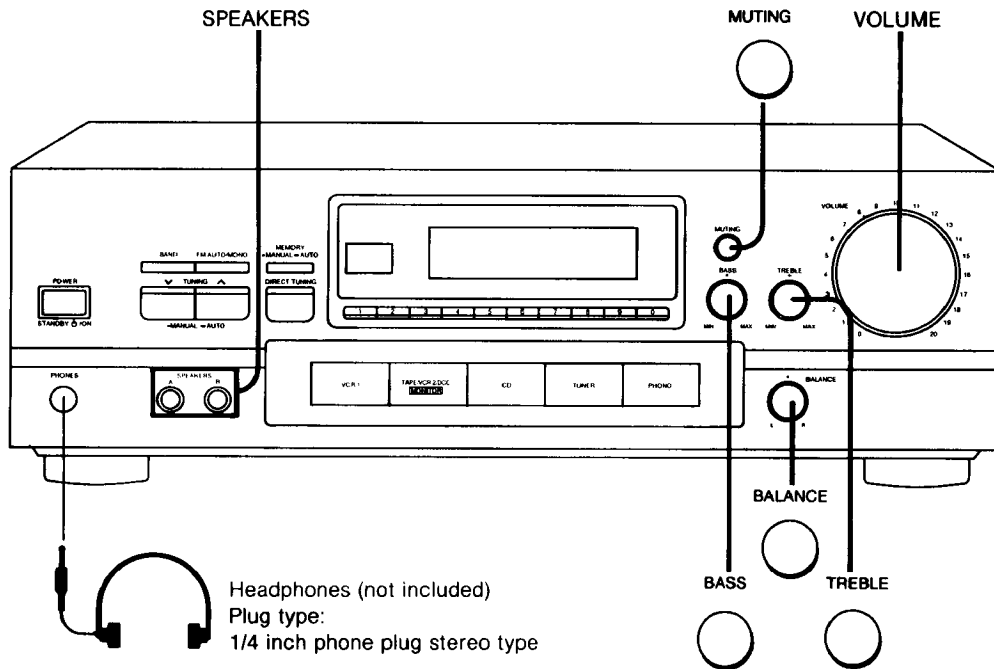
After listening is finished

Be sure to reduce the volume level, and switch the power to the standby condition by pressing POWER.

When tape monitor indicator illuminates or is flashing (approx. 3 seconds)

This indicates that the tape monitor function of this unit is ON. To listen to sources other than a tape, VCR 2 or DCC, be sure to turn off the indicator by pressing TAPE/VCR 2/DCC **MONITOR**.





Headphones (not included)
 Plug type:
 1/4 inch phone plug stereo type

To adjust the tone quality

BASS



Turn **BASS** to adjust the low-frequency sound.

TREBLE



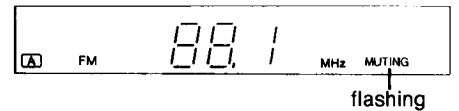
Turn **TREBLE** to adjust the high-frequency sound.

To mute the sound level

MUTING



Press **MUTING**.



Press once again to return to the previous volume level. (The muting indicator will turn off.)

To adjust the sound balance

BALANCE



Turn **BALANCE** to adjust the left/right sound balance.

When listening through headphones

Use **VOLUME** to reduce the volume level, and connect the headphones.

If sound from speakers is not wanted, press **SPEAKERS** (A) and/or (B) to turn off the speaker select indicators.

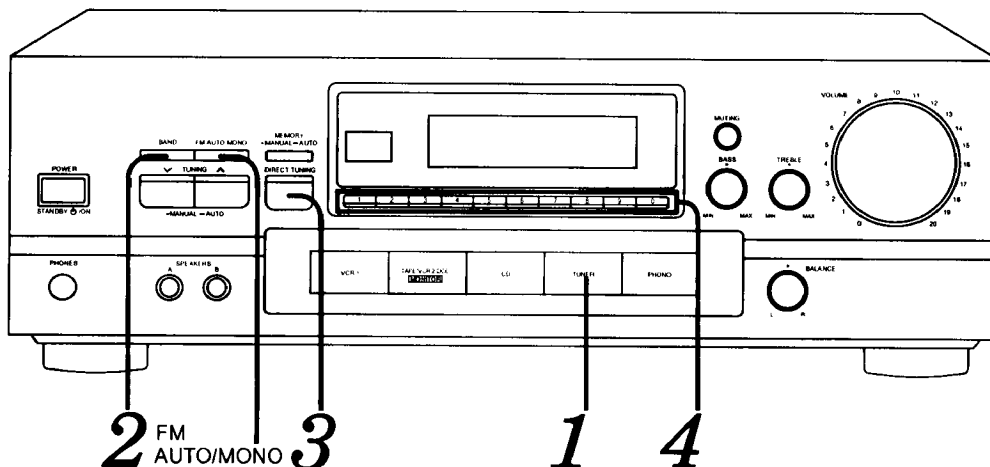
Note

Avoid listening for prolonged periods of time to prevent hearing damage.

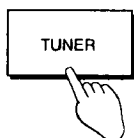
Listening to radio broadcasts

Direct access tuning

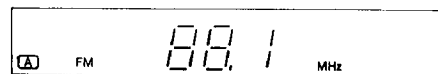
Specify the frequency using the numeric buttons to directly tune to the desired broadcast station.



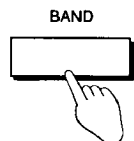
1



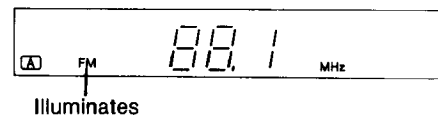
Press **TUNER**.



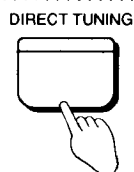
2



Press **BAND** to select "FM" or "AM".

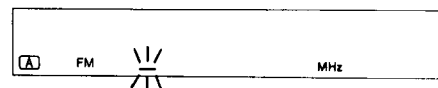


3

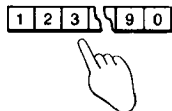


Press **DIRECT TUNING**.

While cursor display is flashing (approx. 10 seconds)



4

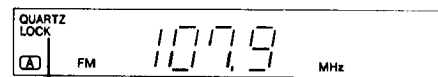


Press the appropriate numeric buttons to enter the frequency.

If the frequency has been input correctly, the frequency display will blink.

If the desired FM frequency is 107.9 MHz

1 → 0 → 7 → 9



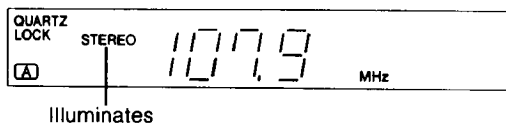
Illuminates when tuned

Note

1. If no button is pressed while the cursor display is flashing, the display will return to the frequency which is currently being received. To re-specify the frequency, repeat the procedure from step 3.
2. If the frequency has not been input correctly, an error message will be displayed. In this case, re-enter the frequency.

When the FM stereo broadcast is received:

This unit will automatically switch to FM stereo reception and the FM stereo indicator will illuminate.

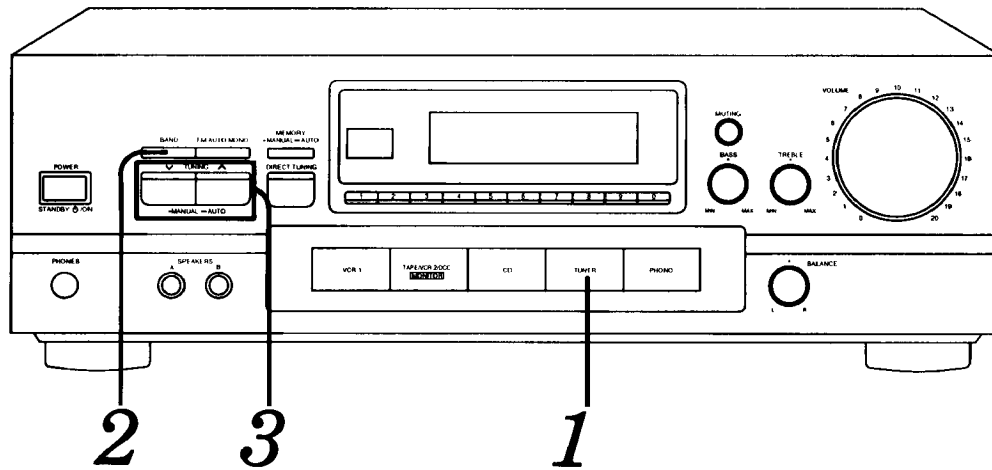


If noise is excessive in the FM stereo mode

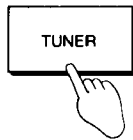
Press FM AUTO/MONO. (The FM stereo indicator will switch off.) The broadcast will be monaural, but noise will be reduced. If the button is pressed once more, stereo mode will be resumed.

Sequential tuning

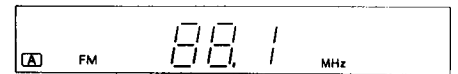
If the frequency is not known, use the tuning control for searching.



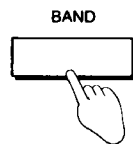
1



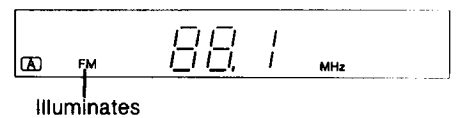
Press TUNER.



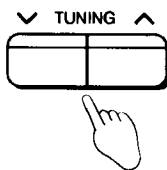
2



Press BAND to select "FM" or "AM".

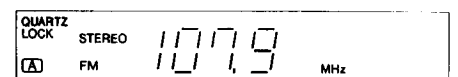


3



Press ∨ or ∧ to tune to the desired broadcast.

Tuning intervals
 FM: 200 kHz interval
 AM: 10 kHz interval



If either button is pressed and held down until the frequency begins to change, the broadcast stations can be tuned automatically when a broadcast station is found.

Note

Tuning may stop automatically if any jamming is encountered.

Preset tuning

By presetting the desired broadcast stations into the memory channels of this unit, broadcast stations can be selected simply by pressing numeric button(s). (Refer to page 15 for tuning.)

Before presetting

How many broadcast stations can be preset?

A total of 30 FM and AM stations can be preset.

How is presetting done?

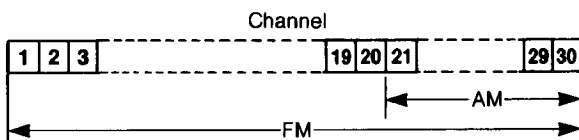
The two following methods are available.

• Automatic memory presetting

Automatic memory presetting allows this unit to automatically search for broadcast stations and then preset them into memory.

With this function, searching proceeds from the frequency currently being displayed and continues through higher frequencies, (up to 107.9 MHz for FM, up to 1710 kHz for AM) and broadcast stations are preset in the order in which they are located.

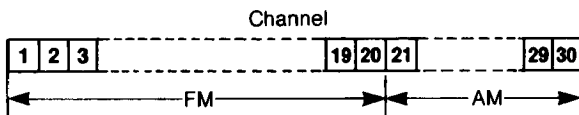
With this method, the channel ranges that can be preset into the memory for different bands (FM or AM) are set as follows.



For FM broadcast stations..... 1-20
For AM broadcast stations..... 21-30

If the FM stations (channels 1-30) are preset and then the AM stations (channels 21-30) are preset:

Because this unit can accommodate a total of 30 preset channels, the settings for FM channels 21-30 will be replaced by the AM settings which were subsequently preset, and the channel allotment will be as shown below.



For FM broadcast stations..... 1-20
For AM broadcast stations..... 21-30

• Manual memory presetting

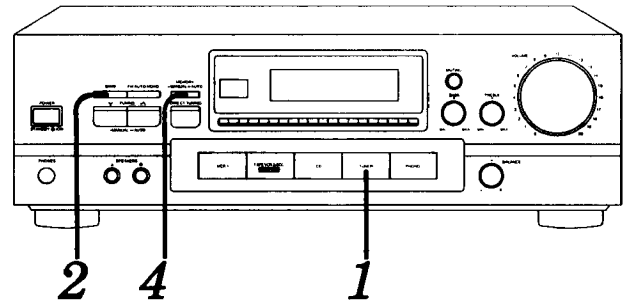
The desired broadcast stations can be preset into the desired channels by the user.

This can also be used as a method for changing selected broadcast stations that were preset in "Automatic memory presetting".

Please remember this:

If a new broadcast station is preset into a channel, the setting for the broadcast station which was previously entered in that channel will be automatically erased.

Automatic memory presetting



1/ Press **TUNER**.

2/ Press **BAND** to select "FM" or "AM".

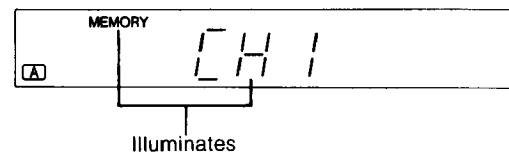
3/ Set to the frequency from which you want to start automatic memory presetting. (Follow steps 3 and 4 on page 12.)

4/ Press **MEMORY** until the frequency begins to change. (Automatic memory presetting will start.)

To stop press MEMORY once again.

When a broadcast station is preset

The memory indicator and the preset channel number will be displayed for approximately 1 second.



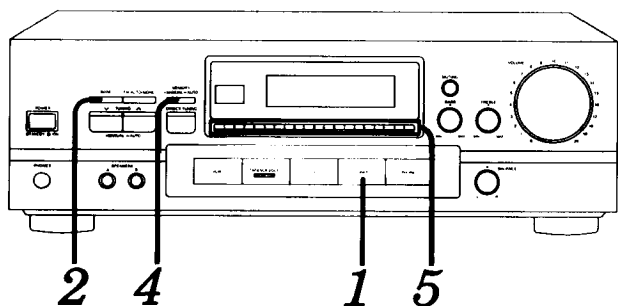
When presetting is completed

The last broadcast station to be preset will be displayed.

Note

Correct presetting may not be possible in cases where the broadcast waves are too strong or too weak. In such cases, carry out presetting manually.

Manual memory presetting



- 1** **TUNER** Press TUNER.
- 2** **BAND** Press BAND to select "FM" or "AM".
- 3** **Set to the desired broadcast.**
 (Follow steps 3 and 4 on page 12 or step 3 on page 13.)
 You can also set the stereo mode to the monaural position.
- 4** **MEMORY** Press MEMORY momentarily.

Illuminates

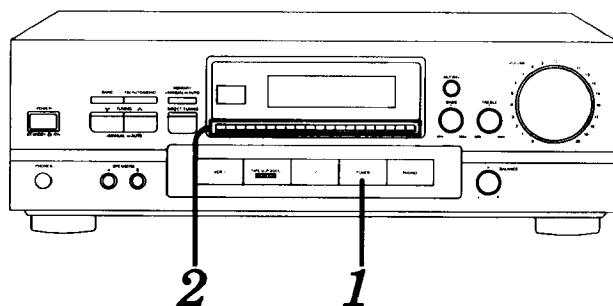
To cancel the memory function, press MEMORY again.
- 5** Specify the desired channel to be preset using the numeric button(s) (completes presetting).
 (Example: Channel 12)

(Within 2 sec.)

To continue presetting

Repeat steps 2 through 5.

To listen to preset broadcast stations



- 1** **TUNER** Press TUNER.
- 2** Specify the preset channel using the numeric button(s).
 (Example: Channel 12)

(Within 2 sec.)

To confirm the channel number of the broadcast station being received

Press TUNER.
 (The channel number will be displayed for about one second.)

Note

The channel number is not displayed if you change the reception frequency or FM mode setting.

For your reference:

Even if the power is switched to the standby condition or the power cord is disconnected from the household AC outlet, the contents of the memory will continue to be stored for approximately one month.

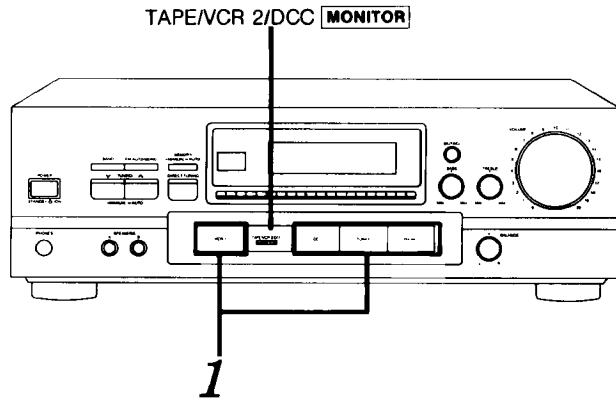
If frequency presettings are accidentally erased

Make the frequency presettings once again.
 The power cord should remain connected for one hour or more for the memory back-up to be effective.

Making a recording

Tape recording on the tape deck or digital compact cassette deck (DCC)

Before recording, prepare the tape deck or DCC for recording (recording level adjustment, etc.). See the tape deck's or DCC's operating instructions for details.



1 Select the audio/video source to be recorded.

2 Begin recording. Follow your tape deck's or DCC's operating instructions.

3 Begin the audio/video source to be recorded.

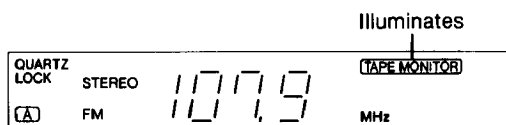
For your reference

When a VCR is connected to the TAPE/VCR 2/ DCC terminals on the rear of this unit, sound recording from an audio or video source can be carried out by the same procedure as given above.

To check the sound recorded while recording is being made

With a tape deck with 3 heads, it is possible to check the sound recorded on the tape.

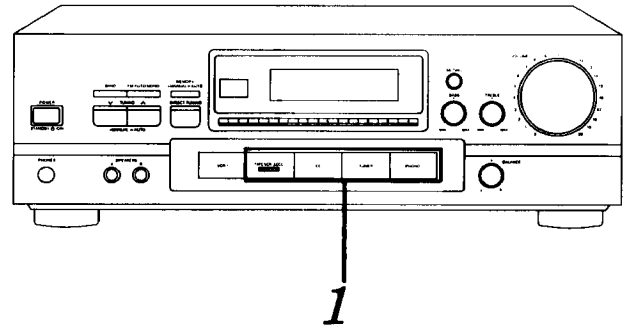
Press TAPE/VCR 2/DCC **MONITOR** on this unit and set the monitor button on the tape deck to "TAPE".



Press TAPE/VCR 2/DCC **MONITOR** once again to turn it off.

VCR (VCR 1) recording from an audio source

Before recording, prepare the VCR (VCR1) for recording (recording level adjustment, input selector setting, etc.). See the VCR's operating instructions for details.



1 Select the audio source to be recorded.

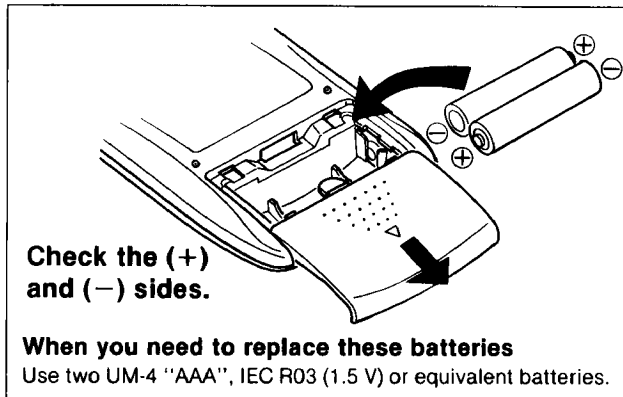
2 Begin recording on the VCR 1. Follow your VCR's operating instructions.

3 Begin the audio source to be recorded.

Remote control operation

Battery installation

Insert the batteries included with this unit as shown below.



Use of batteries

Do not mix old and new batteries, or batteries of different types (carbon and alkaline, etc.).

Always remove old, weak or worn-out batteries promptly and dispose of them properly.

The battery life is about one year.

Although the battery life varies depending on how often the device is used, the batteries should be replaced about once every year on the average.

The batteries should be replaced if commands from the remote control transmitter do not operate the unit even when transmitter is held close to the front panel.

Never subject batteries to excessive heat or flame; do not attempt to disassemble them; and be sure they are not short-circuited.

If the remote control is not to be used for a long period of time, remove the batteries and store them in a cool, dark place.

If a battery leaks, remove all batteries and dispose of them properly. Thoroughly clean the battery compartment before inserting new batteries.

If the electrolyte comes into contact with skin or clothes, flush with water immediately.

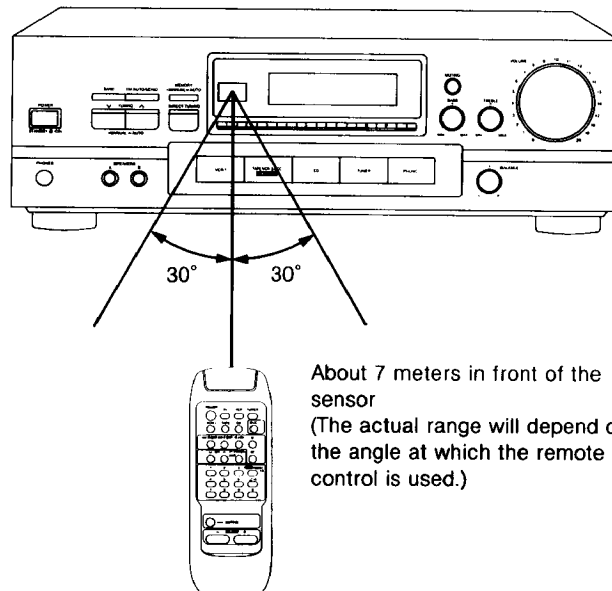
Keep batteries out of reach of children.

Do not use rechargeable (nickel-cadmium) type batteries.

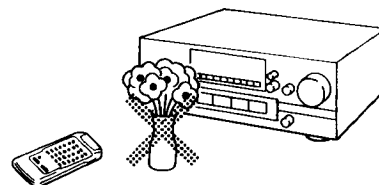
Do not attempt to recharge alkaline or carbon batteries.

Method for use

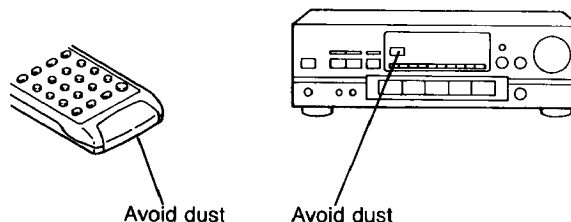
Use the remote control within 60 degrees and within 7 meters (23 ft.) facing directly toward the receiver's remote control signal receptor.



Operation notes



Aim the remote control's transmission window toward the unit's sensor. Avoid any obstacles.



Be sure the transmission window and the unit's sensor are free from dust. Excessive dust might affect performance.

The operation may not be correct if direct sunlight or another strong light source strikes the receiving sensor of this unit. If there is a problem, place the unit away from the light source.

When operating a TV, VCR, digital compact cassette deck (DCC) or a CD changer (or CD player) with a remote control sensor, face this remote control toward the remote control sensor of the unit to be operated.

Remote control operation

This remote control transmitter can be used to operate other units manufactured by this company in addition to this receiver unit, including TVs and VCRs manufactured since 1985, CD changers (or CD players), tape decks and DCC decks.

Note

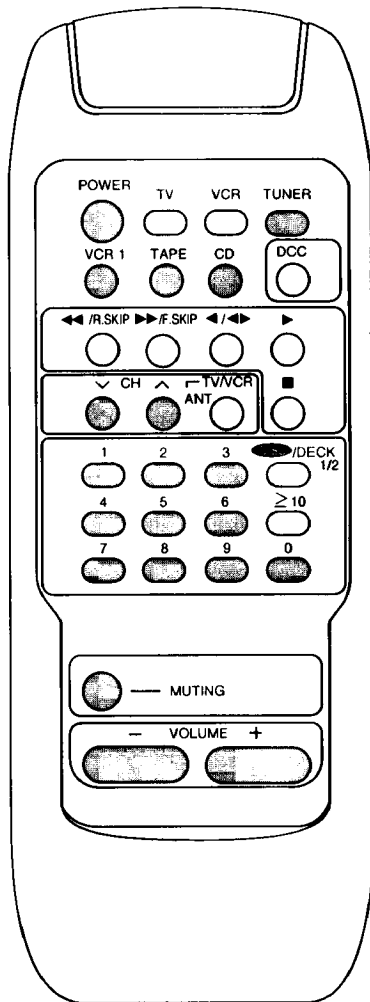
If a tape deck and/or CD changer (or CD player) has the appropriate remote control terminal, be sure to connect the connection cables for the remote control as shown on page 6.

Preparations before use

Connect the power cords of a CD changer (or CD player) and a tape deck as shown on page 6.

If the connections are made and the power supply switches of each unit are set to ON, the power supply for each unit will simultaneously turn ON and OFF when the power supply of the receiver is turned ON and OFF.

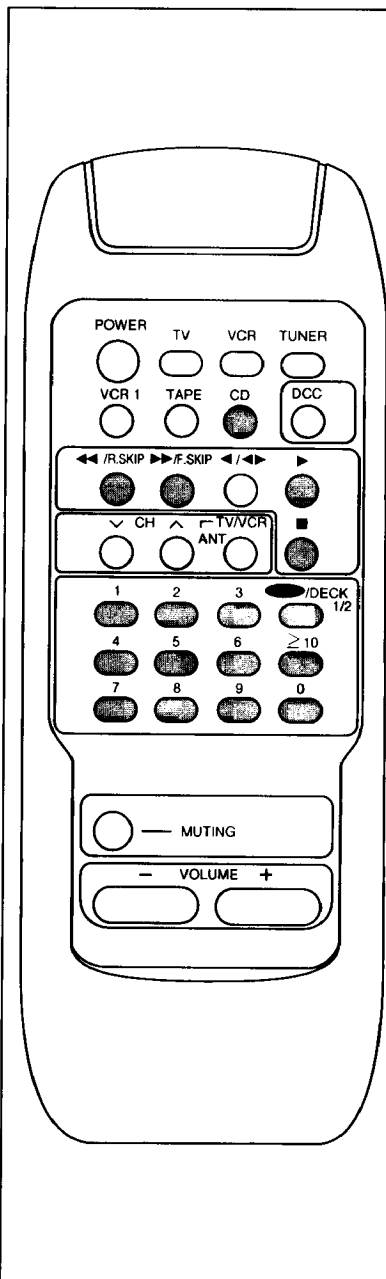
To operate the receiver



Basic operations	
To turn the power supply ON/OFF	<p>TUNER → POWER</p> <p>Once the power has been set to ON, it can be turned ON and OFF simply by pressing POWER. (See Note below.)</p>
To turn the tape monitor function ON	<p>TAPE</p> <p>To turn off the tape monitor function, press one of the input select buttons (TUNER, CD, VCR 1).</p>
To select an input source	<p>TUNER CD VCR 1</p>
To mute the sound level	<p>MUTING</p> <p>Press once more to return to the original volume.</p>
To adjust the volume level	<p>- VOLUME +</p>
<p>Note</p> <p>After carrying out the operation on page 21 for turning the power of the TV or VCR ON or OFF, always press TUNER before pressing POWER when turning the power of the receiver ON and OFF.</p>	
To listen to radio broadcasts	
<p>To select the desired channel sequentially</p> <p>TUNER → CH</p> <p>Select the desired preset channel.</p>	
<p>To select the desired channel directly</p> <p>TUNER → Numeric buttons</p> <p>Specify the preset channel using the numeric button(s).</p> <p>(Example: Channel 12)</p>	

To operate a CD changer (or CD player)

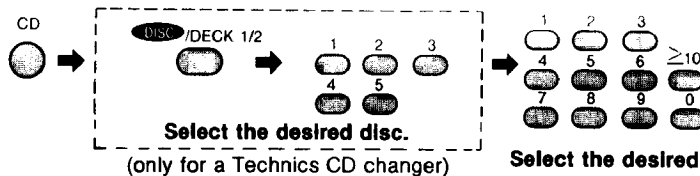
For detailed information concerning CD changer (or CD player) operation, please read the operating instructions for each unit carefully.



Sequential play



Direct access play



Play will start from the selected track. ←

When a CD changer (or CD player) is connected to this unit by using the connection cable for the remote control:

Select a two-digit track number by pressing >>/F.SKIP.

Select the desired track number.

To select a track between 1 and 9: Press the corresponding number on the keypad.

To select a two-digit track number: First press ≥ 10 , and then press the numbers for the two digits.

To skip a track



To stop play



Remote control operation

For detailed information concerning tape deck or digital compact cassette deck operation, please read the operating instructions for each unit carefully.

To operate a cassette deck

	To listen to tapes Only when using a double cassette deck TAPE → DISC / DECK 1/2 Select tape deck (DECK 1 or DECK 2) The remote control indicator of the cassette deck is changed over each time the button is pressed. ↓ (Reverse) (Forward) Playback will begin.	
	To cue or review TAPE → ◀ /R.SKIP ▶ /F.SKIP	During playback For Technics tape decks with the "music select" functions, these buttons can be used to select the desired tune during playback.
	To fast-forward or rewind the tape TAPE → ◀◀ /R.SKIP ▶▶ /F.SKIP	In the stop mode
	To stop play TAPE → ■	

To operate a digital compact cassette deck (DCC)

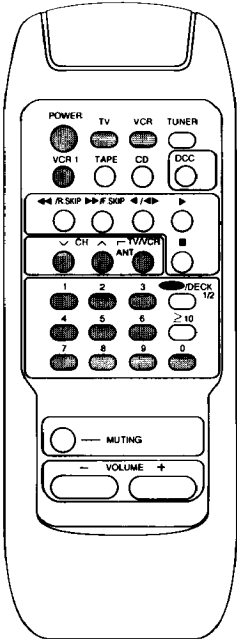
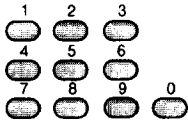
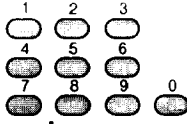


The explanation below is an example of operation in the case where a DCC has been connected to the "TAPE/VCR 2/DCC" terminals on the rear of this unit.
Note The Technics RS-DC10 can not be operated by this remote control.

	To listen to DCC tapes or analog cassette tapes Facing toward the receiver TAPE → DCC → ▶ Playback will begin. Facing toward the DCC	
	To select by track number DCC → [1-9] [0] (≥10)	This is only effective for commercially-available DCC tapes and for other DCC tapes for recording purposes which have had track numbers recorded. Select the desired track number. After the desired track has been searched for, the unit will return to the condition before the button was pressed (playing back, stopped or paused). To select a two-digit track number: First press ≥10, and then press the numbers for the two digits.
	To change the tape side DCC → ◀ / ▶	
	To skip a track DCC → ◀◀ /R.SKIP ▶▶ /F.SKIP	
	To stop play DCC → ■	

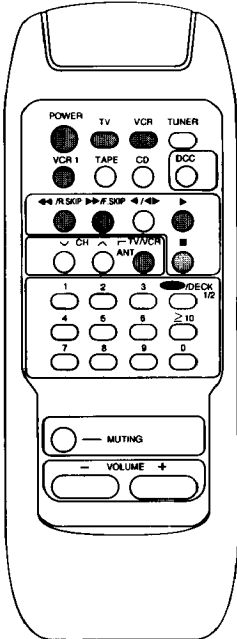




For detailed information concerning TV or VCR operation, please read the operating instructions for each unit carefully.

The explanations below are examples of operation in the case where a TV and VCR have been connected according to the method given on page 6 of these instructions.

To watch TV broadcasts

	<h3>To watch TV broadcasts with a VCR tuner</h3>		
	Facing toward the TV TV → POWER Switch ON the power for TV.	Facing toward the VCR VCR → POWER Switch ON the power for VCR.	Facing toward the receiver VCR 1 Set the TV/VIDEO mode on the TV to "VIDEO".
	Facing toward the VCR CH ↓ ↑ Select the desired channel.		or 
	<h3>To watch TV broadcasts with just a TV</h3>		
Facing toward the TV TV → POWER Switch ON the power for TV.	Facing toward the TV CH ↓ ↑ Set the TV/VIDEO mode on the TV to "TV". Select the desired channel.	or 	
To switch OFF the power for TV TV → POWER			
To switch OFF the power for VCR VCR → POWER			

To watch video tapes

	<h3>To watch video tapes</h3>		
	Facing toward the TV TV → POWER Switch ON the power for TV.	Facing toward the VCR VCR → POWER Switch ON the power for VCR.	Facing toward the receiver VCR 1 Set the TV/VIDEO mode on the TV to "VIDEO". Facing toward the VCR Playback will begin.
	To stop play VCR → [STOP]		
	To fast-forward or rewind the video tape VCR → [R.SKIP] or [F.SKIP]	In the stop mode 	
To switch OFF the power for TV TV → POWER			
To switch OFF the power for VCR VCR → POWER			

TV/VCR ANT How to use the antenna input selection button
 Each time the button is pressed, the antenna input at the VCR changes from "TV" to "VCR" and vice versa.

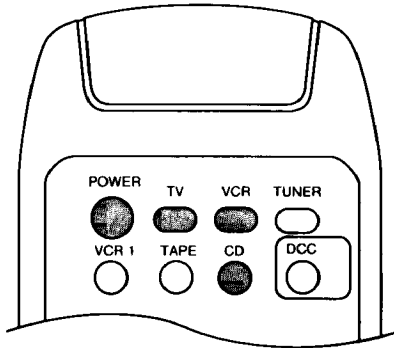
Remote control operation

Note

If you operate a TV, VCR or alternative CD changer (or CD player) using this remote control, the unit may fail to operate due to the differing nature of the remote control signal.

If the remote control fails to operate:

It is necessary to reprogram the signal within the remote control by following this simple procedure.



For CD changer (or CD player) operation

POWER **CD** Press POWER and CD simultaneously, hold for 2 seconds.

For TV operation

POWER **TV** Press POWER and TV simultaneously, hold for 2 seconds.

For VCR operation

POWER **VCR** Press POWER and VCR simultaneously, hold for 2 seconds.

To restore the previous memory contents, carry out the same operations one more time.

Depending on the model, there may be cases where operation is still not possible even if the remote control signal is switched over due to differences in frequency range characteristics.

Product service

Do not attempt to remove the cover(s) or repair the unit yourself. Refer servicing to qualified personnel only.

Product information

For product service, product information or assistance with product operation, refer to the servicenter directory.

Troubleshooting guide

Before requesting service for this unit, check the chart below for a possible cause of the problem you are experiencing. Some simple checks or a minor adjustment on your part may eliminate the problem and restore proper operation.

If you are in doubt about some of the check points, or if the remedies indicated in the chart do not solve the problem, refer to the directory of authorized service centers (enclosed with this unit) to locate a convenient service center, or consult your Technics dealer for instructions.
(In U.S.A. consult MSC Authorized Servicenters for detailed instructions.)

Problem	Probable cause(s)	Suggested remedy
While listening to FM broadcasts		
An unusual hissing noise is heard when listening to the broadcast in stereo, but not heard when listening monaurally.	A slight noise may be heard because the method used for modulation of FM stereo broadcasts is different than that used for monaural broadcasts.	<ul style="list-style-type: none"> • Try reducing the treble sound by using the treble control. • Try changing the location, height and/or direction of the antenna. • If an indoor antenna is being used, change to an outdoor antenna. • Try using an antenna with more elements.
Noise is excessive in both stereo and monaural broadcasts.	Poor location and/or direction of the antenna. Transmitting station is too far away.	<ul style="list-style-type: none"> • Try changing the location, height and/or direction of the antenna. • If an indoor antenna is being used, change to an outdoor antenna. • Try using an antenna with more elements.
The FM stereo indicator or the quartz lock indicator flickers, without completely illuminating.	Poor location and/or direction of the antenna. Transmitting station is too far away.	<ul style="list-style-type: none"> • Try changing the location, height and/or direction of the antenna. • If an indoor antenna is being used, change to an outdoor antenna. • Try using an antenna with more elements.
Excessive distortion in the sound of stereo broadcasts.	Nearby building or mountain.	<ul style="list-style-type: none"> • Try using an antenna with more elements.
While listening to AM broadcasts		
An unusual "beat" sound is heard.	Unit is being used at the same time as the television set. Interference from adjacent broadcast signal.	<ul style="list-style-type: none"> • Turn off the television set, or use this unit farther away from it. • Try reducing the treble sound by using the treble control.
A low-pitched "hum" sound is heard when the broadcast is tuned.	The AM loop antenna connection wires are too close to the power cord. The power supply frequency from the power cord is modulated and heard from the speakers.	<ul style="list-style-type: none"> • Place the antenna connection wires and the power cord farther apart. • Install a special outdoor antenna.
A strange hissing noise is produced continuously or intermittently.	Caused by the "discharge phenomenon" and the "oscillation phenomenon" of electric appliances (such as fluorescent lights, TV, small series-type motors, rectification equipment, etc.).	<ul style="list-style-type: none"> • Try placing this unit farther away from such equipment. • Install noise-prevention equipment on this unit or on the electric appliance.
Problems noted at all times		
Power will not switch ON.	The power cord plug is not completely inserted.	<ul style="list-style-type: none"> • Confirm that the power cord plug is connected completely.
No sound is heard when the power is switched ON.	Connections are incomplete or incorrect to the speaker systems, etc. The incorrect input selector has been pressed. The speaker select indicators are turned off.	<ul style="list-style-type: none"> • Check to be sure that all connection wires are correctly connected. • Check to be sure that the correct selector is pressed. • Turn on the speaker select indicator(s).
Sound stops during a performance, or no sound is heard when the power is switched ON. (The word "OVERLOAD" appears on the display.)	The protection circuitry has functioned because the positive and negative speaker connection wires are "shorted", speaker systems with an impedance less than the indicated rated impedance of this unit are used or under severe use, such as loud volume, excessive power and in an excessively hot environment.	<ul style="list-style-type: none"> • Switch off the power, and after determining and correcting the cause, switch on the power once again. • Use a speaker system of the proper impedance rating.
Remote control transmitter does not function.	Batteries are incorrectly installed. The remote control transmitter batteries are drained. There is an obstruction between the remote control transmitter and the receiver, TV or VCR. The remote control transmitter is not correctly facing the receiver, TV or VCR.	<ul style="list-style-type: none"> • Insert the batteries so that the positive (+) and negative (-) polarities are correct. • Replace them with new batteries. • Remove the obstruction. • Face the remote control transmitter correctly toward the signal receptor of each unit.

Technical specifications (IHF'78)

■ AMPLIFIER SECTION

Rated minimum sine wave	
RMS power output	
40 Hz–20 kHz both channels driven	
0.8% total harmonic distortion	100 W per channel (8 Ω)
1 kHz continuous power output	
both channels driven	
0.8% total harmonic distortion	103 W per channel (8 Ω)
Total harmonic distortion	
rated power at 40 Hz–20 kHz	0.8% (8 Ω)
half power at 1 kHz	0.07% (8 Ω)
Dynamic headroom (Power amplifier section)	2 dB (8 Ω)
SMPTE intermodulation distortion	0.5% (8 Ω)
Frequency response	
PHONO	RIAA standard curve ±0.8 dB
CD, VCR 1, TAPE/VCR 2/DCC	10 Hz–70 kHz, ±3 dB
Input sensitivity	
PHONO	0.4 mV (3 mV, IHF '66)
CD, VCR 1, TAPE/VCR 2/DCC	27 mV (200 mV, IHF '66)
S/N (IHF, A)	
PHONO	68 dB (71 dB, IHF '66)
CD, VCR 1, TAPE/VCR 2/DCC	70 dB (85 dB, IHF '66)
Input impedance	
PHONO	47 kΩ
CD, VCR 1, TAPE/VCR 2/DCC	22 kΩ
Tone controls	
BASS	50 Hz, +10 dB to –10 dB
TREBLE	20 kHz, +10 dB to –10 dB
Low frequency damping factor	30 (8 Ω)
Load impedance	
A or B	8 Ω
A and B	8 Ω

■ FM TUNER SECTION

Frequency range	87.9–107.9 MHz
Sensitivity	11.2 dBf (2 μV, IHF '58)
50 dB quieting sensitivity	
MONO	18.3 dBf (4.5 μV, IHF '58)
STEREO	38.3 dBf (45 μV, IHF '58)
Total harmonic distortion	
MONO	0.2%
STEREO	0.3%
S/N	
MONO	75 dB
STEREO	70 dB
Frequency response	20 Hz–15 kHz, +1 dB, –2 dB
Alternate channel selectivity	65 dB
Capture ratio	1 dB
Image rejection at 98 MHz	45 dB
IF rejection at 98 MHz	80 dB
Spurious response rejection at 98 MHz	75 dB
AM suppression	50 dB
Stereo separation	
1 kHz	40 dB
10 kHz	30 dB
Carrier leak	
19 kHz	–35 dB
38 kHz	–50 dB
Antenna terminal	75 Ω (unbalanced)

■ AM TUNER SECTION

Frequency range	530–1710 kHz
Sensitivity	20 μV, 330 μV/m
Selectivity	55 dB
Image rejection at 1000 kHz	40 dB
IF rejection at 1000 kHz	60 dB

■ GENERAL

Power consumption	160 W
Power supply	AC 120 V, 60 Hz
Dimensions (W × H × D)	430 × 136 × 305 mm (16-15/16" × 5-11/32" × 12")
Weight	6.6 kg (14.5 lb.)

Notes:

1. Specifications are subject to change without notice. Weight and dimensions are approximate.
2. Total harmonic distortion is measured by the digital spectrum analyzer.

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